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L5: Entry 7 of 7

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Feb 21, 2001

DERWENT-ACC-NO: 2001-171507

DERWENT-WEEK: 200171

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TITLE: Manufacture of ferromagnetic sputter target for magnetron cathode sputtering, comprises forming target blank from a ferromagnetic material of specified intrinsic magnetic permeability, and deforming into a non-planar sputter target

INVENTOR: HOO, H; MCDONALD, P ; XIONG, W

PATENT-ASSIGNEE:

ASSIGNEE

PRAXAIR ST TECHNOLOGY INC

CODE

PRAXN

PRIORITY-DATA: 1999US-0377587 (August 19, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
GB 2353294 A	February 21, 2001		025	C23C014/35
KR 2001050049 A	June 15, 2001		000	C23C014/35
JP 2001115258 A	April 24, 2001		007	C23C014/34

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
GB 2353294A	July 7, 2000	2000GB-0016774	
KR2001050049A	August 11, 2000	2000KR-0046537	
JP2001115258A	August 17, 2000	2000JP-0247144	

INT-CL (IPC): C23 C 14/34; C23 C 14/35; G11 B 5/851; H01 F 10/16; H01 F 41/18; H01 J 17/34

ABSTRACTED-PUB-NO: GB 2353294A

BASIC-ABSTRACT:

NOVELTY - A non-planar ferromagnetic sputter target is made by forming a target blank from a ferromagnetic material of intrinsic magnetic permeability greater than 1.0, and deforming the target blank into a non-planar sputter target. The magnetic permeability of the ferromagnetic material is decreased from the intrinsic value in at least a portion of the sputter target.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a non-planar ferromagnetic sputter target made by the above method.

USE - Used in manufacturing ferromagnetic sputter target in the magnetron cathode sputtering of magnetic thin films. The sputter target is used in thin film deposition in industries e.g. data storage and very large scale integration semiconductor.

ADVANTAGE - The low magnetic permeability of the ferromagnetic materials results in a significant increase in the magnetic flux at the surface of the ferromagnetic

targets and a lowering of the argon pressure needed to obtain stable plasma. Also allows for an increase in target thickness, which produces a longer target life and decreases the frequency of target replacements. It enables high rate deposition, uniform film thickness, and higher target utilization.

CHOSEN-DRAWING: Dwg.0/2

TITLE-TERMS: MANUFACTURE FERROMAGNETIC SPUTTER TARGET MAGNETRON CATHODE SPUTTER
COMPRISE FORMING TARGET BLANK FERROMAGNETIC MATERIAL SPECIFIED INTRINSIC MAGNETIC
PERMEABLE DEFORM NON PLANE SPUTTER TARGET

DERWENT-CLASS: L03 V05 X25

CPI-CODES: L03-B05E; L03-H04D;

EPI-CODES: V05-F04B5C; V05-F05C3A; V05-F08D1A; X25-A04;

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2001-051455

Non-CPI Secondary Accession Numbers: N2001-123895